Exploring Aeronautics							
2006 Science							
Content and Achievement Standards							
North Dakota Science	•						
Grade 5	0.1	04 1 1					
Activity/Lesson	State	Standards					
Fundamentals of Aeronautics (145-176)	ND	SCI.5.5.2.1	Communicate scientific procedures (e.g. visual display, graph, journal, oral presentation) that enable others to repeat the investigation				
Fundamentals of Aeronautics (145-176)	ND	SCI.5.5.3.4	Identify the effects force and mass have on the motion of an object				
Fundamentals of							
Aeronautics (145-176)	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.				
Fundamentals of Aeronautics (145-176)	ND	SCI.5.5.8.1	Explain why results of similar scientific investigations may turn out differently (i.e., inconsistencies in methods, materials, and observations)				
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		201 2 1	Use technology to design a solution to a				
Wings(177-208)	ND	SCI.5.5.6.1	problem				
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		201 2	Evaluate a product or design using established				
Wings(177-208)	ND	SCI.5.5.6.2	criteria				
Airplane Control(209-			Identify the effects force and mass have on the				
256)	ND	SCI.5.5.3.4	motion of an object				
Airplane Control(209-							
256)	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.				
Airplane Control(209-			Use technology to design a solution to a				
256)	ND	SCI.5.5.6.1	problem				
Airplane Control(209-			Evaluate a product or design using established				
256)	ND	SCI.5.5.6.2	criteria				
Tools of Aeronautics(257-326)	ND	SCI.5.5.1.1	Use an appropriate model (e.g., drawing, equation, computer program, diagram, or 3-D device) to convey scientific information				
Tools of			Use technology to design a solution to a				
Aeronautics(257-326)	ND	SCI.5.5.6.1	problem				
Tools of			Evaluate a product or design using established				
Aeronautics(257-326)	ND	SCI.5.5.6.2	criteria				
Llow on Airelone Flice	ND	0015524	Identify the effects force and mass have on the				
	ND	SCI.5.5.3.4	motion of an object				
How an Airplane Flies	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.				
The Activity Conter	ND	COLE E O A	Identify the effects force and mass have on the				
The Activity Center	ND	SCI.5.5.3.4	motion of an object				
The Activity Center	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.				
The Astinity Oscilar	NID	0015504	Use technology to design a solution to a				
The Activity Center	ND	SCI.5.5.6.1	problem				
Science of Flight	ND	SCI.5.5.1.1	Use an appropriate model (e.g., drawing, equation, computer program, diagram, or 3-D device) to convey scientific information				
Colonna of Elicate	ND	0015504	Identify the effects force and mass have on the				
Science of Flight	ND	SCI.5.5.3.4	motion of an object				
Science of Flight	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.				

Science of Flight	ND	SCI.5.5.6.1	Use technology to design a solution to a problem
Science of Flight	טאו	301.3.3.0.1	5.2.1. Communicate scientific procedures (e.g.
Intograting with			
Integrating with Aeronautics	ND	SCI.5.	visual display, graph, journal, oral presentation) that enable others to repeat the investigation
	ND	SCI.3.	
Integrating with	ND	0015504	Identify the effects force and mass have on the
Aeronautics	ND	SCI.5.5.3.4	motion of an object
Integrating with	ND	0015505	
Aeronautics	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.
Integrating with			Measure weather conditions (i.e., temperature,
Aeronautics	ND	SCI.5.5.5.1	wind direction and speed, and precipitation)
Intro to Aeronautics			
(109-123)	ND	SCI.5.5.2.2	Formulate an explanation supported by data
Intro to Aeronautics			Identify the effects force and mass have on the
(109-123)	ND	SCI.5.5.3.4	motion of an object
Intro to Aeronautics			
(109-123)	ND	SCI.5.5.3.5	Explain why gravity is called an attracting force.
Scientific Method(124-			Evaluate a product or design using established
144)	ND	SCI.5.5.6.2	criteria
,			Explain why results of similar scientific
			investigations may turn out differently (i.e.,
Scientific Method(124-			inconsistencies in methods, materials, and
144)	ND	SCI.5.5.8.1	observations)
177)	IND	001.0.0.0.1	obodi validito)
		Exploring Aero	nautice
		2006 Scier	
	Co	ntent and Achieven	
Nameda Balanda C.		ntent and Achieven	ient Standards
North Dakota Science	9		
Grade 6		06	
Grade 6	State	Standards	
Grade 6		Standards	Explain the components of a scientific
Grade 6 Activity/Lesson		Standards	investigation (e.g., hypothesis, observation, data
Grade 6 Activity/Lesson Fundamentals of	State		investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of
Grade 6 Activity/Lesson	State	Standards SCI.6.6.2.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
Grade 6 Activity/Lesson Fundamentals of	State		investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of
Grade 6 Activity/Lesson Fundamentals of	State		investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
Grade 6 Activity/Lesson Fundamentals of	State		investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176)	State ND	SCI.6.6.2.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors)
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176)	State ND	SCI.6.6.2.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208)	State ND ND	SCI.6.6.2.1 SCI.6.6.6.2	 investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries,
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208)	State ND	SCI.6.6.2.1	 investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work)
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208)	State ND ND	SCI.6.6.2.1 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of	ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208)	State ND ND	SCI.6.6.2.1 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors)
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of	ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics	ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries,
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of	ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work)
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics	ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics	ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific investigation (e.g., hypothesis, observation, data
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics The Resource Center	ND ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics	ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.6.2	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics The Resource Center	ND ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Select alternative methods of scientific
Grade 6 Activity/Lesson Fundamentals of Aeronautics (145-176) Wings(177-208) Wings(177-208) The Tools of Aeronautics The Resource Center	ND ND ND ND ND	SCI.6.6.2.1 SCI.6.6.6.2 SCI.6.6.8.1 SCI.6.6.8.1	investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Design a product or solution to a problem given constraints (e.g., limits of time, costs, materials and environmental factors) Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work) Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable)

Onion on of Elimba	ND	0010001	Use appropriate tools and techniques to gather
Science of Flight	ND	SCI.6.6.2.4	and analyze data Identify different forms of energy (e.g., chemical,
Science of Flight	ND	SCI.6.6.3.3	mechanical, heat, sound)
Science of Flight	IND	301.0.0.3.3	Design a product or solution to a problem given
			constraints (e.g., limits of time, costs, materials
Science of Flight	ND	SCI.6.6.6.2	and environmental factors)
Colonice of Flight	ITD	001.0.0.0.2	Explain the components of a scientific
			investigation (e.g., hypothesis, observation, data
Integrating with			collection, data interpretation, communication of
Aeronautics	ND	SCI.6.6.2.1	results, replicable)
			Explain the components of a scientific
			investigation (e.g., hypothesis, observation, data
Intro to Aeronautics			collection, data interpretation, communication of
(109-123)	ND	SCI.6.6.2.1	results, replicable)
Intro to Aeronautics			Use appropriate tools and techniques to gather
(109-123)	ND	SCI.6.6.2.4	and analyze data
Intro to Aeronautics			Use data from scientific investigations to
(109-123)	ND	SCI.6.6.2.5	determine relationships and patterns
			Design a product or solution to a problem given
Intro to Aeronautics			constraints (e.g., limits of time, costs, materials
(109-123)	ND	SCI.6.6.6.2	and environmental factors)
			Explain the components of a scientific
			investigation (e.g., hypothesis, observation, data
Scientific Method(124-			collection, data interpretation, communication of
144)	ND	SCI.6.6.2.1	results, replicable)
0 : "" 14 (1 1/404			Select alternative methods of scientific
Scientific Method(124-		001000	investigations (e.g., library, internet, field work)
144)	ND	SCI.6.6.2.2	to address different kinds of questions.
Scientific Method(124-	1	0016604	Use appropriate tools and techniques to gather
144) Scientific Method(124-	ND	SCI.6.6.2.4	and analyze data Use data from scientific investigations to
144)	ND	SCI.6.6.2.5	determine relationships and patterns
144)	IND	301.0.0.2.3	determine relationships and patterns
		Exploring Aerona	
		2006 Science	
N (1 D 1 (0 :		t and Achieveme	nt Standards
North Dakota Science	9		
Grade 7	State	Ctondordo	
Activity/Lesson Tools of	State	Standards	Evolain how models can be used to illustrate
Aeronautics(257-326)	ND	SCI.7.7.1.1	Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division)
The Tools of	IND	301.7.7.1.1	Explain how models can be used to illustrate
Aeronautics	ND	SCI.7.7.1.1	scientific principles (e.g., osmosis, cell division)
Actoriautics	IND	301.7.7.1.1	Explain how models can be used to illustrate
Science of Flight	ND	SCI.7.7.1.1	scientific principles (e.g., osmosis, cell division)
Ocicioc of Flight	110	301.7.7.1.1	Identify technologies (e.g., communication,
			agriculture, information processing,
Science of Flight	ND	SCI.7.7.6.2	transportation) that are influenced by societies
CO.STICO OT FINGING		30	Explain how science is influenced by human
			qualities (e.g., reasoning, insightfulness,
Science of Flight	ND	SCI.7.7.8.1	creativity, life-long learning)

		Exploring Aero	nautics				
2006 Science							
Content and Achievement Standards							
North Dakota Science)						
Grade 8							
Activity/Lesson	State	Standards					
			Interpret the effect of balanced and unbalanced				
Fundamentals of			forces on the motion of an object (e.g.,				
Aeronautics (145-176)	ND	SCI.8.8.3.3	convection currents, orbital motion, tides)				
			Explain how factors (i.e., fronts, winds, air				
Tools of			masses, air pressure, humidity, temperature,				
Aeronautics(257-326)	ND	SCI.8.8.5.1	location) affect weather				
			Explain how all objects exert gravitational force				
			and this force is affected by the distance				
How an Airplane Flies	ND	SCI.8.8.3.4	between the masses of the objects				
			Design and conduct a scientific investigation				
			(e.g., making systematic observations, making				
			accurate measurements, identifying and				
Science of Flight	ND	SCI.8.8.2.4	controlling variables)				
			Explain how factors (i.e., fronts, winds, air				
			masses, air pressure, humidity, temperature,				
Science of Flight	ND	SCI.8.8.5.1	location) affect weather				
			Use basic mathematics and statistics (e.g.,				
Integrating with			operations, mean, median, mode, range, and				
Aeronautics	ND	SCI.8.8.2.3	estimation) to interpret quantitative data				
			Design and conduct a scientific investigation				
			(e.g., making systematic observations, making				
Integrating with			accurate measurements, identifying and				
Aeronautics	ND	SCI.8.8.2.4	controlling variables)				
			Explain how factors (i.e., fronts, winds, air				
Integrating with			masses, air pressure, humidity, temperature,				
Aeronautics	ND	SCI.8.8.5.1	location) affect weather				
			Use basic mathematics and statistics (e.g.,				
Intro to Aeronautics			operations, mean, median, mode, range, and				
(109-123)	ND	SCI.8.8.2.3	estimation) to interpret quantitative data				
			Use basic mathematics and statistics (e.g.,				
Scientific Method(124-			operations, mean, median, mode, range, and				
144)	ND	SCI.8.8.2.3	estimation) to interpret quantitative data				
			Design and conduct a scientific investigation				
			(e.g., making systematic observations, making				
Scientific Method(124-			accurate measurements, identifying and				
144)	ND	SCI.8.8.2.4	controlling variables)				